Remarks

This application has been reviewed in light of the final Office Action of June 9, 2005. Claims 1-21 are pending, and all claims are rejected. In response, the following remarks are submitted. Reconsideration of this application, as amended, is requested.

Applicant incorporates by reference the Remarks of the prior Amendment.

Claims 1-21 are rejected under 35 USC 103 over Jamieson US Patent 5,446,581 in view of Kirkham US Patent 6,424,460. Applicant traverses this ground of rejection.

The following principle of law applies to all sec. 103 rejections. MPEP 2143.03 provides "To establish prima facie obviousness of a claimed invention, all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F2d 981, 180 USPQ 580 (CCPA 1974). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)." [emphasis added] That is, to have any expectation of rejecting the claims over a single reference or a combination of references, each limitation must be taught somewhere in the applied prior art. If limitations are not found in any of the applied prior art, the rejection cannot stand. In this case, the single applied prior art reference clearly does not arguably teach some limitations of the claims.

Amended claim 1 recites in part:

"a front lens group having negative optical power,...wherein the front lens is not made of silicon and is not made of germanium".

Amended claim 11 recites in part:

"the front lens group comprises a front lens that is not made of silicon and is not made of germanium"

The only materials taught by Jamieson for his powered lenses are silicon and germanium. Sapphire is used for unpowered lenses in some instances, but not for the powered lenses and not for the front lens.

As stated in para. [0029] of the present application,

> "Traditional infrared lens materials used for lenses of inverse-telephoto optical systems, silicon and germanium, have indices of refraction well above 3.3, and are not operable for the lenses of the present approach, except for their use in the one intermediate lens 50a. Additionally, the lens materials of the present approach have superior optical performance over a broader range of the infrared spectrum than do silicon and germanium."

That is, Applicant specifically excluded the lens materials taught by Jamieson for use as the front lens.

It is a well-established principle of law that a prima facie case of obviousness may not properly be based on a reference which teaches away from the present invention as recited in the claims.

> "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant. In re Sponnoble, 160 USPQ 237 244 (CCPA 1969)...As "a useful general rule,"..."a reference that 'teaches away' can not create a prima facie case of obviousness." In re Gurley, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994)"

According to this principle, no prima facie case of obviousness may be established using the teachings of Jamieson.

Kirkham teaches that "The system (40) uses a silicon front lens A", see Abstract.

Kirkham thus also teaches away from the limitations of claim 1, and thence from the limitations of claims 2-10. Kirkham teaches away from the limitations of claim 11, and thence from the limitations of claims 12-16.

Kirkham teaches that the front lens is positively powered (col. 1, line 38). All of the present claims recite in part:

"a front lens group having negative optical power..."

Kirkham teaches directly away from this claim limitation and thus teaches a completely different type of optical system than the inverse telephoto lens of the present invention.

According to the principle discussed above, no prima facie case of obviousness may be established using the teachings of Kirkham.

The explanation of the rejection and the Response to Arguments assert that Kirkham teaches the use of zinc sulphide, and therefore teaches the limitation "wherein the front lens is not made of silicon and is not made of germanium". There are several responses.

First, Kirkham does not teach the use of zinc sulphide. A person reading Kirkham would clearly not be led to using zinc sulfide. After identifying zinc sulfide, Kirkham immediately discusses the shortcomings of zinc sulphide, explains why it is not used, and teaches away from its use (col. 1, lines 15-18). Kirkham follows this teaching away from the use of zinc sulphide by teaching the use of a silicon front lens (col. 1, lines 18-27). The mention of a material is not a teaching of the use of that material where, as in Kirkham, the art reference explains why the material is undesirable and goes on to teach something else.

Second, although Kirkham mentions the use of zinc sulfide, there is no teaching in favor of the use of zinc sulfide in the prior art currently of record. Kirkham speaks of "prior proposals", but there is no information as to whether these "prior proposals" themselves qualify as prior art under sec. 103. If not, then the only legally sufficient prior art is Kirkham's explicit teaching away from the use of zinc sulfide. The "prior proposals" may have been, for example, internal prior proposals within Kirkham's

employer.

Third, the context of Kirkham's discussion is completely different from that of Jamieson. Jamieson teaches a front lens group with a negative optical power (col. 2, lines 20-21), but Kirkham teaches a front lens group with a positive optical power (col. 1, line 37). That is, Kirkham does not teach an inverse telephoto optical system. So whatever Kirkham teaches about the material of construction of his positive-optical-power front lens, that teaching is not pertinent or related to the optical arrangement taught by Jamieson, a negative-optical-power front lens.

Fourth, the explanation of the rejection characterizes "...silicon or germanium, and zinc sulfide are known as art recognized equivalents..." (sentence bridging pages 2-3 of the final Office Action). Kirkham expressly teaches that the silicon and zinc sulfide are not equivalents, by pointing out why zinc sulfide is not acceptable and why silicon is superior.

Fifth, the present application contains a full comparison between the present approach and that taught by the closest prior art, Jamieson. The performance of the present approach is shown to be superior to that of Jamieson's approach. The asserted combination of Jamieson and an incorrect characterization of Kirkham is not closer prior art, because Kirkham teaches against using zinc sulfide in the front lens.

Sixth, Jamieson does much more than fail to specify that the "front lens is not made of silicon or germanium." Jamieson explicitly teaches that the front lens must be silicon or germanium. Neither Jamieson nor Kirkham gives any reason to use any other material for the front lens.

There is no basis for the attempt to combine teachings from Jamieson and Kirkham, see the discussion of the prior Amendment at pages 9-11, which discussion is incorporated here.

Claim 17 recites in part:

> "a front lens group having negative optical power, wherein the front lens group comprises a front lens having a refractive index of from about 2.2 to about 2.6".

Neither reference has any such teaching. Both references teach that the front lens is silicon (see preceding discussion), which has a refractive index of about 3.42, well above the maximum permitted refractive index for the front lens recited in claim 17.

Claim 17 further recites in part:

> "an intermediate lens group that receives an infrared light beam from the front lens group, wherein the intermediate lens group comprises an intermediate lens having a refractive index of from about 1.35 to about 1.7".

The lenses of Jamieson are all either silicon or germanium, having respective refractive indices of about 3.42 and about 4.0, see Table VI of Jamieson. Kirkham teaches a number of different lens materials, see Table I. All of the lens materials taught by Kirkham have a refractive index of 2.25 or above, well outside the limits recited for the intermediate lens.

Thus, the combination of Jamieson and Kirkham cannot teach the limitations of claim 17, or of its dependent claims 18-21.

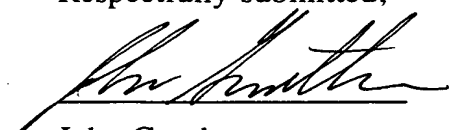
The explanation of the rejection of claim 17, found at page 5 of the final Office Action, does not address this limitation of the refractive index of the intermediate lens.

Applicant asks that the Examiner reconsider and withdraw this ground of rejection.

Applicant submits that the application is now in condition for allowance, and requests such allowance.

Respectfully submitted,

Dated: July 26, 2005



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